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CLAIMS:

1. A polynucleotide that encodes a 24P4C12 polypeptide, wherein the polynucleotide is selected from the group consisting of:

(a) a polynucleotide having the sequence as shown in FIGS. 1A-1D (SEQ ID NO: 1) or FIG. 1E (SEQ ID NO: 3), wherein T can also be U;

(b) a polynucleotide having the sequence as shown in FIGS. 1A-1D (SEQ ID NO: 1), from nucleotide residue number 6 through nucleotide residue number 2138, wherein T can also be U;

(c) a polynucleotide encoding a 24P4C12 polypeptide whose sequence is encoded by a cDNA contained in the plasmids designated p24P4C12-GTE5 or p24P4C12-GTE9 deposited with American Type Culture Collection as Designation Nos. 207129 and 207084, respectively;

(d) a polynucleotide encoding a 24P4C12 protein having the amino acid sequence shown in FIGS. 1A-1D (SEQ ID NO: 2) or FIG. 1E (SEQ ID NO: 4); and

(e) a polynucleotide that is fully complementary to a polynucleotide of any one of (a)-(d).

2. A polynucleotide that encodes a polypeptide that is at least 90% identical to the amino acid sequence shown in FIGS. 1A-1D (SEQ ID NO: 2) or FIG. 1E (SEQ ID NO: 4) over its entire length.

3. A polynucleotide that encodes a 24P4C12 polypeptide, wherein the polypeptide includes an amino acid sequence selected from the group consisting of NRSC (SEQ ID NO: 8), NSTG (SEQ ID NO: 9), NMTV (SEQ ID NO: 10), NDTT (SEQ ID NO: 11), NLSA (SEQ ID NO: 12), NISS (SEQ ID NO: 13), NTSC (SEQ ID NO: 14), NSSC (SEQ ID NO: 15),

NGSL (SEQ ID NO: 16), SFR, SVK, SSK, TLR, SAK, SGR, SCTD (SEQ ID NO: 17), SVAE (SEQ ID NO: 18), SCPE (SEQ ID NO: 19), TVGE (SEQ ID NO: 20), SVQE (SEQ ID NO: 21), RDEDDEAY (SEQ ID NO: 22), GAYCGM (SEQ ID NO: 23), GMGENK (SEQ ID NO: 24), GVPWNM (SEQ ID NO: 25), GLIDSL (SEQ ID NO: 26), GIYYCW (SEQ ID NO: 27), GASISQ (SEQ ID NO: 28), GQMMST (SEQ ID NO: 29), GLFWTL (SEQ ID NO: 30), GAFASF (SEQ ID NO: 31), LGKK (SEQ ID NO: 32), and LFILLLRLVAGPLVLVILGVL (SEQ ID NO: 33).

4. A polynucleotide that encodes a 24P4C12 polypeptide, wherein the polypeptide includes a transmembrane domain shown in FIGS. 1A-1D.

5. A polynucleotide of any one of claims 1-4 that is labeled with a detectable marker.

6. A recombinant expression vector that contains a polynucleotide of any one of claims 1-4.

7. A host cell that contains an expression vector of claim 6.

8. A process for producing a 24P4C12 polypeptide comprising culturing a host cell of claim 7 under conditions sufficient for the production of the polypeptide.

9. The process of claim 8, further comprising recovering the 24P4C12 polypeptide so produced.

10. A 24P4C12 polypeptide produced by the process of claim 8.

11. A 24P4C12 polypeptide encoded by the polynucleotide of any one of claims 1-4.

12. A polypeptide comprising at least 15 contiguous amino acids of the polypeptide of claim 11.

13. An antibody or fragment thereof that specifically binds to the 24P4C12 polypeptide of claim 10.

14. The antibody or fragment thereof of claim 13, which is monoclonal.

15. The antibody or fragment thereof of claim 13, which is polyclonal.

16. A recombinant protein comprising the antigen binding region of a monoclonal antibody of claim 14.

17. The antibody or fragment thereof of claim 13, which is labeled with a detectable marker.

18. The antibody or fragment thereof of claim 17, wherein the detectable marker is selected from the group consisting of a radioisotope, fluorescent compound, bioluminescent compound, chemiluminescent compound, metal chelator or enzyme.

19. The antibody fragment of claim 13, which is an Fab, F(ab')2, Fv or Sfv fragment.

20. The antibody or fragment thereof of claim 13, which is a human antibody.

21. The antibody or fragment thereof of claim 13, which is conjugated to a toxin or a therapeutic agent.

22. The antibody of claim 13, which comprises murine antigen binding region residues and human antibody residues.

23. A transgenic animal producing a monoclonal antibody of claim 20.

24. A hybridoma producing a monoclonal antibody of claim 14.

25. A single chain monoclonal antibody that comprises the variable domains of the heavy and light chains of a monoclonal antibody of claim 14.

26. A vector comprising a polynucleotide encoding a single chain monoclonal antibody of claim 25.

27. An assay for detecting the presence of a 24P4C12 protein in a biological sample comprising contacting the sample with an antibody or fragment thereof of claim 17, and detecting the binding of 24P4C12 protein in the sample thereto.

28. An assay for detecting the presence of a 24P4C12 polynucleotide in a biological sample, comprising

(a) contacting the sample with a polynucleotide probe that specifically hybridizes to the polynucleotide of claim 1; and

(b) detecting the presence of a hybridization complex formed by the hybridization of the probe with 24P4C12 polynucleotide in the sample, wherein the presence of the hybridization complex indicates the presence of 24P4C12 polynucleotide within the sample.

29. An assay for detecting the presence of 24P4C12 mRNA in a biological sample comprising:

(a) producing cDNA from the sample by reverse transcription using at least one primer;

(b) amplifying the cDNA so produced using 24P4C12 polynucleotides as sense and antisense primers to amplify 24P4C12 cDNAs therein;

(c) detecting the presence of the amplified 24P4C12 cDNA,

wherein the 24P4C12 polynucleotides used as the sense and antisense probes are capable of amplifying the 24P4C12 cDNA contained within a plasmids designated p24P4C12-GTE5 or p24P4C12-GTE9, deposited with American

Type Culture Collection as Designation Nos. 207129 and 207084, respectively.

30. A method of detecting the presence of a cancer expressing 24P4C12 protein that comprises determining the level of 24P4C12 protein expressed by cells in a test tissue sample from an individual and comparing the level so determined to the level of 24P4C12 expressed in a corresponding normal sample, the presence of elevated 24P4C12 protein in the test sample relative to the normal sample providing an indication of the presence of such cancer in the individual.

31. A method of monitoring 24P4C12 gene products comprising determining the status of 24P4C12 gene products expressed by cells in a test tissue sample from an individual and comparing the status so determined to the status of 24P4C12 gene products in a corresponding normal sample, the presence of aberrant 24P4C12 gene products in the test sample relative to the normal sample providing an indication of disregulated cell growth within the individual.

32. A method of diagnosing the presence of cancer in an individual comprising:

(a) determining the level of 24P4C12 mRNA expressed in a test sample obtained from the individual; and

(b) comparing the level so determined to the level of 24P4C12 mRNA expressed in a comparable known normal tissue sample,

the presence of elevated 24P4C12 mRNA expression in the test sample relative to the normal tissue sample providing an indication of the presence of cancer.

33. A method of diagnosing the presence of cancer in an individual comprising:

(a) determining the level of 24P4C12 protein expressed in a test sample obtained from the individual; and

(b) comparing the level so determined to the level of 24P4C12 protein expressed in a comparable known normal tissue sample,

the presence of elevated 24P4C12 protein in the test sample relative to the normal tissue sample providing an indication of the presence of cancer.

34. The method of claim 32 or 33, wherein the cancer is prostate cancer, and the test and normal tissue samples are selected from the group consisting of prostate tissue, bone tissue, lymphatic tissue, serum, blood or semen.

35. A method for identifying a 24P4C12 specific binding agent comprising:

(a) contacting a candidate agent that binds 24P4C12 with H38087; and

(b) determining whether the candidate agent binds H38087, a lack of binding of the candidate agent to H38087 being indicative of 24P4C12 specificity.

36. A 24P4C12-specific binding agent identified by the method of claim 35.

37. A pharmaceutical composition comprising a 24P4C12 polypeptide of claim of claim 10 or an immunogenic portion thereof, the vector of claim 26, an antisense polynucleotide complementary to a polynucleotide of claim 1, a ribozyme capable of cleaving a polynucleotide of claim 1, an antibody or fragment thereof of claim 13, or a 24P4C12 specific binding agent of claim 36, and, optionally, a physiologically acceptable carrier.

38. A method of treating a patient with a cancer that expresses 24P4C12 which comprises administering to said patient a vector according to claim 26, such that the vector delivers the single chain monoclonal antibody coding

sequence to the cancer cells and the encoded single chain antibody is expressed intracellularly therein.

39. A method of treating a patient with a cancer that expresses 24P4C12 which comprises administering to said patient a composition of claim 37.

40. A vaccine composition for the treatment of a cancer expressing 24P4C12 comprising an immunogenic portion of a 24P4C12 protein and a physiologically acceptable carrier.

41. A method of inhibiting the development or progression of a cancer expressing 24P4C12 in a patient, comprising administering to the patient an effective amount of the vaccine composition of claim 40.